HOW-TO GUIDE: RICOTTA CHEESE

BPK 110 TUTORIAL ACTIVITY

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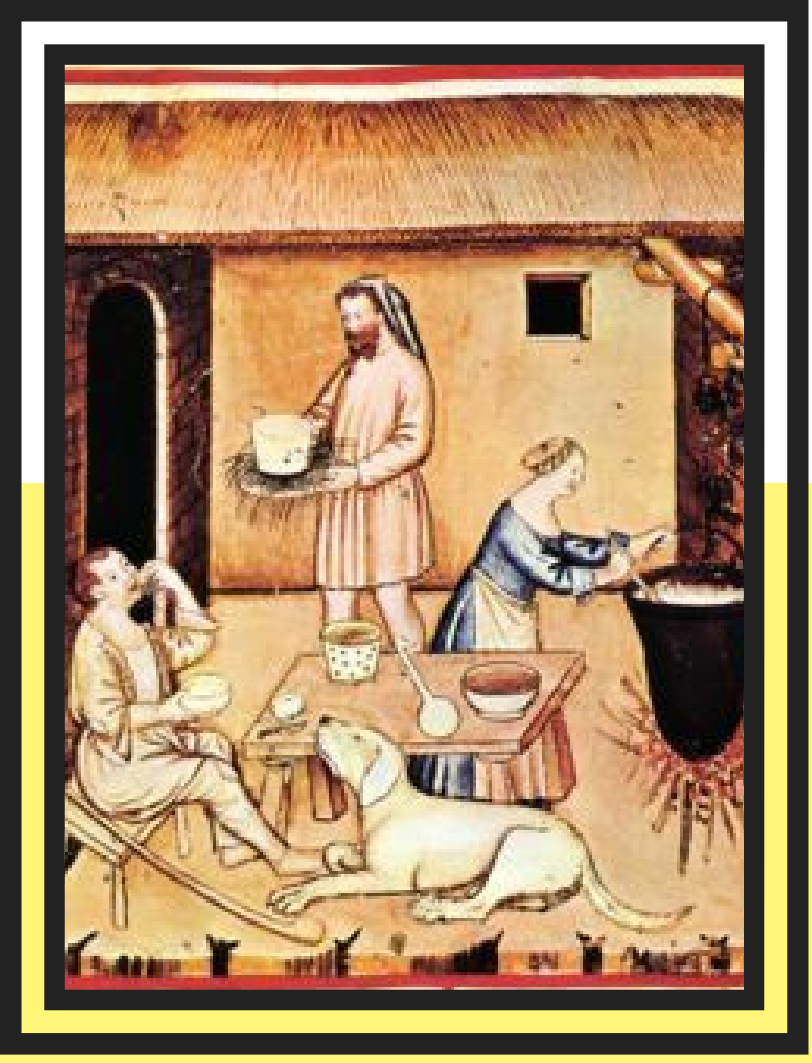
A BRIEF INTRODUCTION

Ricotta is an Italian creamy curd made from sheep, cow, goat, or Italian water buffalo milk whey leftover from the production of other cheeses. It is known for its creamy appearance and sweet taste. Ricotta means “re-cooked” which refers to how the leftover whey is boiled to extract the proteins and make the cheese. It is believed that Ricotta cheese could date back to the bronze age.

Though the earliest mention of Ricotta was in the early 13th century wherein Professor Santi Correnti of the history department in the University of Catania wrote that during the reign of the Sicilian king, Frederick II, he and his hunting party found a hut of a dairy farmer who is making ricotta. The king pulled out a bread load and poured hot ricotta and whey on top. Then, he advised his hunting party that those who do not eat it using a spoon will leave all their Ricotta cheeses behind. Though there is not much literature that contains mention of Ricotta, it is believed that the cheese was commonly eaten by the Shepherds that produced dairy products, due to the cheese’s short shelf life. Certain paintings and literature indicate that it was possible that aristocrats ate Ricotta as well.



Depiction of the Ricotta cheese makers King Fredrick II found

LIST OF REQUIRED INGREDIENTS AND TOOLS

Ingredients

Milk
(goat, cow, sheep, etc.)
Salt
Vinegar

Tools

Deep saucepan
Wooden Spoon
Strainer
Large bowl
Cheese cloth
Slotted spoon

STEP-BY-STEP INSTRUCTIONS

RECIPE PROVIDED BY JAMIE OLIVER

1. Pour milk into a large, deep saucepan and place over medium heat.
2. Add 1 teaspoon of sea salt, and stir until dissolved.
3. Once the milk comes to a boil, stir the milk with a wooden spoon
4. Pour in the vinegar. Small lumps will begin to rise on the surface. These are the milk curds.
5. Use the wooden spoon to gently move the curds into the centre of the pan to allow room for more curds to rise around the edges
6. Once the mixture begins to boil, remove the pan from the heat, cover, and leave for 15 minutes. Meanwhile, place 2 or 3 layers of cheesecloth in a large strainer.
7. Place strainer over a large bowl.
8. Remove the lid from the pan and allow steam to escape.
9. Using a slotted spoon, gently remove the curds out of the pan, shaking the spoon to remove any excess liquid.
10. Place the curds into the strainer, gently stirring to pull all the excess liquid through the cheesecloth.
11. Allow the curds to sit in the strainer for 15 minutes.
12. Wrap the cheesecloth around the curds and squeeze gently to remove more liquid until you reach the desired consistency
13. Use the ricotta immediately, or allow to cool completely and store in the fridge
14. Use within 2 days.

THE SCIENCE OF RICOTTA CHEESE

BEHIND THE SCENES

What makes cheese so Ricotta? Why is it named Ricotta? And why is Ricotta cheese so delicious?

Overview

Well, you've found the right place to ask these questions! Ricotta means “recooked” in Italian, which gives us some insight into the science behind the cheese (Delany, 2019). Ricotta is known as a “whey cheese”, and is appropriately known as a byproduct of milk. In the traditional method of making Ricotta cheese, there are two byproducts in the post milk production. ”Curds” are the solid remnants, and “whey” is the liquid form. The whey is heated to denature and coagulate the whey proteins, and the coagulated protein is separated from the whey.Ricotta is made from the leftover solid bits of curd in the whey after being mixed with milk, vinegar, and then strained multiple times through a cheesecloth to form a soft, fluffy, white, cheese we know as Ricotta. In today's market, cheese product manufacturers directly cook and make Ricotta cheese from fresh milk to fulfill the demand. Manufacturers add extra ingredients to help the milk coagulate to create the soft and creamy texture directly rather than using byproducts to create Ricotta cheese.

THE SCIENCE OF RICOTTA CHEESE

BEHIND THE SCENES

A Deeper Look

The traditional method requires the whey to be acidified to a pH level of 5.6–6.0 with either acetic or citric acid (Lucey, 2011). It is then heated to 80 °C by slowly rising the temperature through indirect heating. The flocculated protein rises to the surface where it is collected and separated from the whey and placed in molds for further drainage. Flocculation is integral to this process, and is known by the process where particles come out of suspension in the form of floc or flakes, most likely due to the addition of a clarifying agent (Lucey, 2011). In this case, calcium chloride and rennet is sometimes added to improve flocculation (New England, 2020). The curd may be homogenized to produce a smoother consistency. Acidification can also be carried out by the addition of acid whey powder to milk. The whey derived from Ricotta cheese can be acidified to pH 5.4 with citric acid and heated to 80 °C to recover additional whey proteins (Lucey, 2011). The modern method of producing Ricotta introduces the full-fat milk and whey to a heated environment, and are heated to 90 °C and directly acidified with acid to pH 5.3–5.5 (Lucey, 2011). This results in precipitation of the protein. The curd is then separated from the whey on a conveyor belt and hot packaged (New England, 2020).

COMMON MISTAKES WHEN PREPARING RICOTTA CHEESE

FOR HOMEMADE RICOTTA, THERE ARE A FEW PRINCIPLES TO ACCOUNT FOR:

1. Cheesecloth: Best to have two or three layers for best quality of fluff and texture
2. Heat & Timing: Only use low to medium heat to begin. Turn off heat after the pot mixture boils and continue to mix slowly but swiftly for it to form its texture.
3. Quality & Texture: Leave the mixture on the cheesecloth for approximately 20 minutes before ready for consumption. Could also extend the time to 25mins+ for a thicker texture for own preference.

WHAT WORKS WITH RICOTTA

2 RICOTTA DISHES

Lasagna

Ingredients

1 pound sweet Italian sausage
1 pound lean ground beef
1 large white onion diced
5 cloves garlic minced
1 (28 ounce) can crush tomatoes
2 (6 ounce) cans tomato paste
1(15 ounce) can tomato sauce
1/2 cup white wine
2 tablespoons white sugar
1/2 cup chopped fresh basil
1 teaspoon fennel seeds
1 teaspoon ground oregano
1/2 teaspoon salt
1/4 teaspoon ground black pepper
1/4 cup chopped fresh parsley1 pound lasagna noodles
30 ounces ricotta cheese

Recipe

1. In a large pot over medium heat, add in ground sausage and ground beef. Use a spoon to break up the meat into small pieces. Add in onion and garlic and cook until meat is well browned, stirring constantly. Stir in sugar, fresh basil, fennel, oregano, 1/2 teaspoon salt, pepper, and 1/4 cup chopped parsley. Pour in crushed tomatoes, tomato paste, tomato sauce, and wine*. Stir well and bring to a simmer. Reduce heat to low and simmer 1-4 hours, stirring occasionally.
2. Meanwhile, place lasagna noodles into the bottom of a pan. Pour hot tap water directly over the noodles, making sure the pasta is completely immersed in the water. Let them soak for 30 minutes, then drain and discard water.
3. In a mixing bowl, combine ricotta cheese with egg, remaining 2 tablespoons parsley, 1/2 teaspoon salt, and nutmeg. Refrigerate until ready to assemble lasagna.
4. Preheat the oven to 375 degrees. Lightly grease a deep 9x13 pan.
5. To assemble, spread about 1 cup of meat sauce in the bottom of the prepared pan. Place 4 noodles on top. Spread with 1/3 of the ricotta cheese mixture. Top with 1/4 of mozzarella cheese slices. Spoon 1 1/2 cups meat sauce over mozzarella, then sprinkle with 1/4 cup parmesan cheese. Repeat layering two more times to create three complete layers. To finish, place a final layer of pasta, topped with another 1 cup of meat sauce to cover the pasta. Top with remaining mozzarella and Parmesan cheese. Cover loosely with aluminum foil.
6. Bake in a preheated oven for 25 minutes. Remove foil, and bake an additional 25 minutes to allow cheese to brown. Serve hot.

Ricotta Cherry Tomato Salad

Ingredients

For The Salad

1. 1 cup ricotta cheese
2. 2 tbsp extra virgin olive oil
3. 1/2 tsp sea salt
4. 1/2 cup cherry tomatoes, cut in half
5. 1/2 cup snap peas, cut in half
6. 2 cups baby arugula

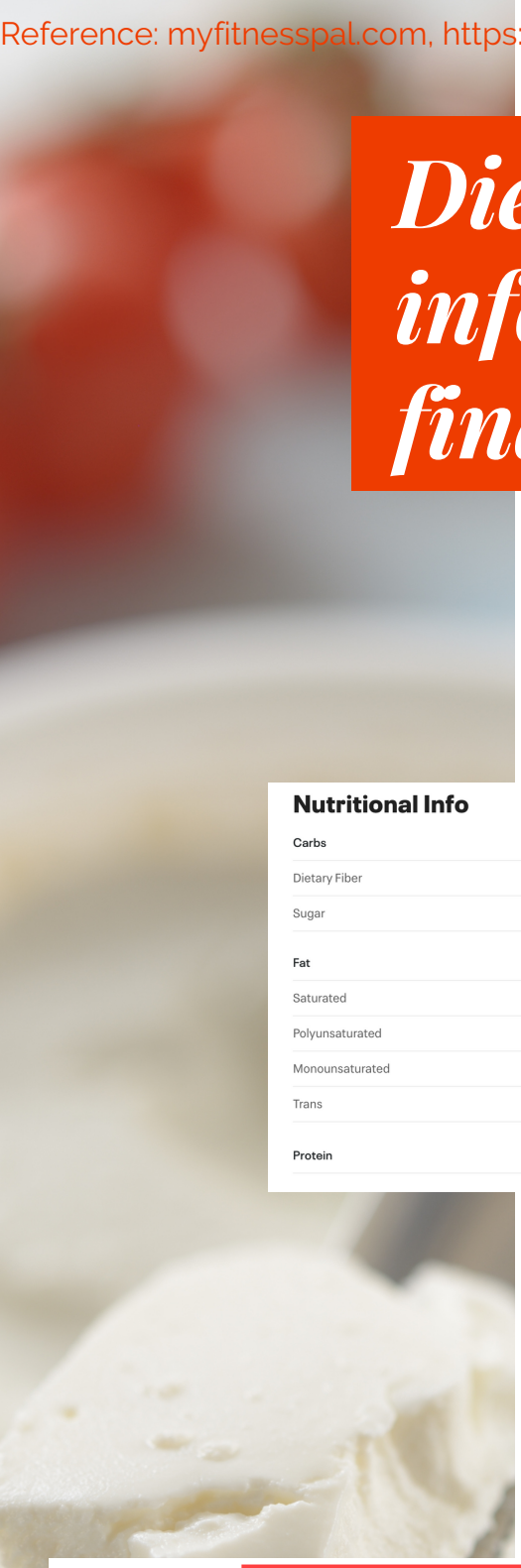
For the Dressing

1. 2 tbsp toasted pine nuts
2. 2 tbsp white balsamic vinegar
3. 1 cup basil3 tbsp extra virgin olive oil
4. Pinch of chili flakes
5. Sea salt and pepper to taste

Recipe

1. Step 1. Whip the ricotta cheese with olive oil and sea salt in the food processor. It will make it nice and creamy. Transfer the cheese to a serving platter and don’t bother washing the food processor, will use it for the dressing.
2. Step 2. In a mixing bowl, toss together the arugula, peas, and tomatoes.
3. Step 3. In the food processor, combine the ingredients for the dressing and blend well.
4. Step 4. Pour the dressing on top of the salad and mix thoroughly.
5. Step 5. Add the salad on top of the ricotta cheese and serve.

Reference: myfitnesspal.com, https://www.nutritionadvance.com/ricotta-cheese-nutrition-benefits



Dietary information for the final product

Ricotta

Ricotta - Cheese

Serving Size :50 g

78 Cal	11% 2g Carbs	62% 5g Fat	27% 5g Protein

Nutritional Info

Carbs	**2 g**	Sodium	0 mg
Dietary Fiber	0 g	Potassium	0 mg
Sugar	0 g	Cholesterol	0 mg
Fat	**5 g**	Vitamin A	0 %
Saturated	3 g	Vitamin C	0 %
Polyunsaturated	0 g	Calcium	0 %
Monounsaturated	0 g	Iron	0 %
Trans	0 g		
Protein	**5 g**		

Percentages are based on a diet of 2000 calories a day.

Activity Needed to Burn:

78 calories

11 Minutes of Cycling	7 Minutes of Running	28 Minutes of Cleaning

Vitamin Profile of Ricotta Cheese

Vitamin	Amount (% RDI)
Vitamin B2	11 %
Vitamin A	9 %
Vitamin B12	6 %
Folate	3 %
Vitamin B5	2 %
Vitamin B6	2 %
Vitamin E	1 %
Vitamin K	1 %
Vitamin B1	1 %
Vitamin B3	1 %

Mineral Profile of Ricotta Cheese

Mineral	Amount (% RDI)
Calcium	21 %
Selenium	21 %
Phosphorus	16 %
Zinc	8 %
Potassium	3 %
Magnesium	3 %
Sodium	3 %
Iron	2 %
Copper	1 %

Dietary information for the final product

Ricotta Cheese

Ricotta provides a large amount of fat and protein, and a small amount of carbohydrate. The food contains a good amount of vitamin A and B2, and small amounts of most other vitamins. A main benefit to consuming the cheese is the calcium density, selenium, and phosphorus. There are also lower amounts of numerous other essential minerals. There are several benefits to consuming the dairy product, as noted below.

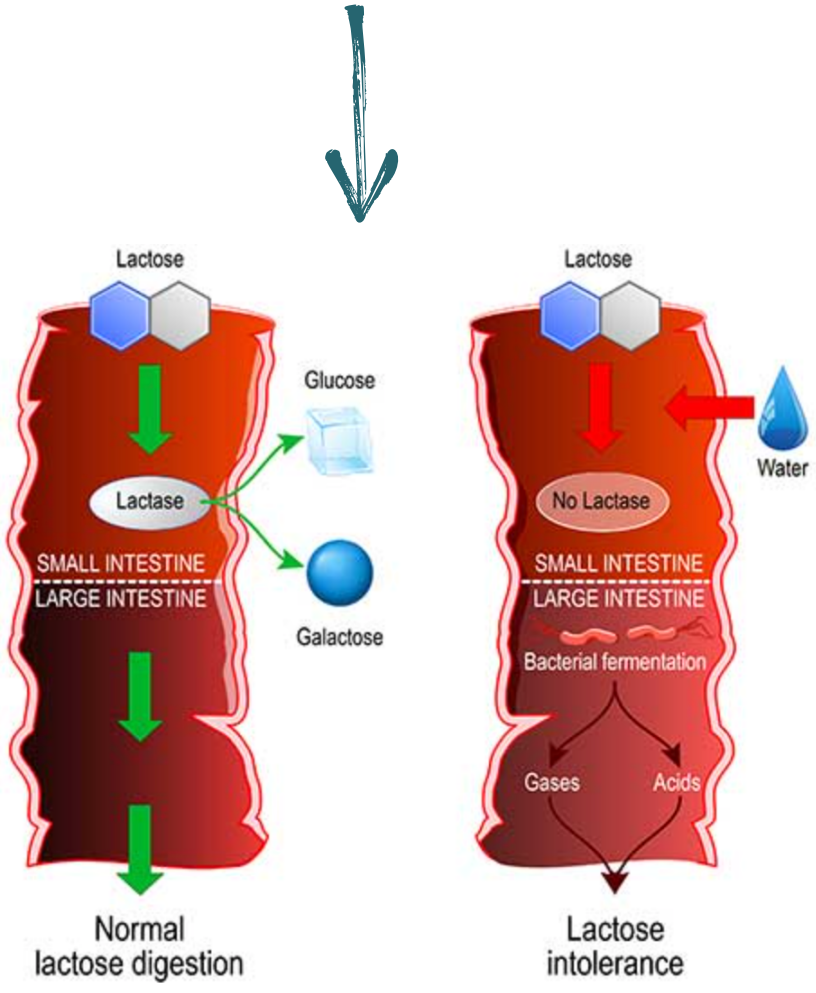
Benefits

1) Rich In Protein
2) Supplies DHA and EPA Omega-3
3) High In Selenium
4) A Good Source of Calcium
5) Lower In Lactose Than Some Dairy Products

Reference: https://www.nutritionadvance.com/ricotta-cheese-nutrition-benefit

Drawbacks

While ricotta is a healthy dairy food that provides several benefits, it may cause issues for certain groups of people. Similar to most dairy products, people with severe lactose intolerance may wish to avoid ricotta cheese. Ricotta will also cause problems for anyone with a whey protein allergy. It does not contain casein protein.



Example of lactose intolerance in the digestive tract

Reference: https://www.nutritionadvance.com/ricotta-cheese-nutrition-benefits/

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